

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

Please amend the paragraph beginning in page 2, line 17, of the specification as filed as follows:

Under such circumstances, for making up the above-mentioned drawbacks of the copolymer derived from 3HB and 3HV, copolymers containing, as [[a]] component components, a hydroxyalkanoic acid other than 3HB and 3HV 3HB and a hydroxyalkanoic acid other than 3HV such as 3-hydroxypropionic acid (hereinafter referred to briefly as "3HP"), 3-hydroxyhexanoic acid (hereinafter referred to briefly as "3HH"), 3-hydroxyoctanoic acid (hereinafter referred to briefly as "3HO"), 3-hydroxynonanoic acid (hereinafter referred to briefly as "3HN"), 3-hydroxydecanoic acid (hereinafter referred to briefly as "3HD") or 3-hydroxydodecanoic acid (hereinafter referred to briefly as "3HDD") are intensively studied (Poirier, Y., Nawrath C., Somerville C, BIO/TECHNOLOGY, 13, 142-150, 1995). Among them, noteworthy studies are those on a copolyester comprising 3HB and 3HH unit, particularly a copolymer P(3HB-co-3HH) derived only from 3HB and 3HH, and on a production method thereof (Japanese Kokai Publication Hei-05-93049 and Japanese Kokai Publication Hei-07-265065). The production methods of P(3HB-co-3HH) described in these patent documents comprise a fermentation production from fatty acids such as oleic acid or oils and fats such as olive oil by using *Aeromonas caviae* isolated from soil. A study regarding characteristics of P (3HB-co-3HH) has also been conducted (Y. Doi, S. Kitamura, H. Abe, Macromolecules 28, 4822-4823, 1995). This document reports a fermentation production of P (3HB-co-3HH) with a 3HH content of 11 to 19 mol % by culturing *A. caviae* with a fatty acid of not less than 12 carbon atoms as the only carbon source. The result shows that, as the 3HH content increases, P(3HB-co-3HH) exhibits a gradual increase of flexibility from

the hard and brittle characteristics of P(3HB) and finally shows more flexibility than P(3HB-co-3HV).

The following is for correcting printing errors in paragraphs [0005], [0007], [0024], [0033], [0044], and [0059] of the published patent application, US 2006-0121585 A1. These errors are not found in the specification as filed.

Please amend paragraph [0005] as follows:

[0005] Additionally, it was reported that a polyhydroxyalkanoic acid (PHA) synthase gene from *A. caviae* was cloned and introduced into *R. eutropha* having a high accumulating ability of polyhydroxybutyric acid(PHB) of not less than 90% to generate a recombinant strain, which was then used to produce P(3HB-co-3HH) using fatty acids as a carbon source (T. Fukui, Y. Doi, J. Bacteriol., vol. 179, No. 15, 4821-4830, 1997 and Japanese Kokai Publication Hei-10-108682). In thesedocuments these documents, it is reported that P(3HB-co-3HH) having the 3HH content of 10 to 20 mol % may be produced by using sodium octanoate as a carbon source. Furthermore, a method has been recently disclosed which comprises using multiple carbon sources in producing a polyester using the above recombinant strain, and it was revealed that a carbon number of an oil or fat or a fatty acid used as a carbon source had an influence on the 3HH-content of P(3HB-co-3HH) (Japanese Kokai Publication 2001-340078).

Please amend paragraph [0007] as follows:

[0007] As described above, with respect to copolymers such as P(3HB-co-3HH), it is most important to establish a technology capable of arbitrary controlling the composition ratio of the copolymer in order to achieve practical or commercial application as well as to satisfy demands of consumers. Another barrier for the practical application is high production cost. With regard to that, a specific expensive fatty acid is required to be added to a culture medium for copolymerizing monomeric units other than 3HB or for increasing the content

thereof in the conventional methods of producing a copolyester (Japanese Kohyo Publication Hei-11-500008 and Japanese Kokai Publication 2001-340078). Moreover, with respect to P(3HB-co-3HH), the yield of cells is low in any methods disclosed hitherto, and not only expensive carbon sources are required but also the productivity tends to be more deteriorated when trying to enhance the 3HH content. Thus, none of the conventional methods can be adopted as a production method for practical application of the polymer. As described above, it is essential to control the composition ratio of the monomeric unit in a copolyester in order to find a wide a wide range of applications for the copolyester. Whereupon, it has been long awaited to develop a technology which may realize a high productivity of cells and polymer content in low cost as well, and which enables to arbitrary control the composition of the copolyester.

Please amend paragraph [0024] as follows:

[0024] Herein, it is possible to control the species and composition ratio of the monomeric units constituting the copolyester by appropriately selecting the oils or fats to be used. For example, in the case a copolyester with a high 3HH content is desired in producing a copolyester comprising 3HH unit, it is preferable to use an oil or fat containing lauric acid in the constituent fatty acids, which is commonly called as "lauric oils". Oils or fats containing lauric acids in the constituent fatty acid include natural oils and fats such as palm kernel oil and coconut oil, fractionated oils and oils and fats such as palm kernel olein oil, and mixed oils containing these lauric oils and fats.

Please amend paragraph [0033] as follows:

[0033] Furthermore, as an indirect method, there may be mentioned a method comprising measuring an oxygen concentration and a carbon dioxide concentration in an exhaust gas to estimate the net weight of cells by the oxygen consuming rate or the carbon dioxide generation rate to control the specific substrate feed rate on a real-time basis. However, as a result of the

investigation conducted by conducted by the present inventors, a significant change is acknowledged in the above respiration property between the cell growth phase, in which nitrogen or phosphorus does not become depleted, and the polyester accumulation phase, which is after depletion. Therefore, it is preferable to study the respiration property in the growth phase and the production phase in detail beforehand.

Please amend paragraph [0044] as follows:

[0044] In the present invention, a method of collecting the copolyester ~~from bacterial~~ from bacterial cells is not particularly restricted, and the conventional solvent extraction methods, physical cell disruption, and chemical treatment, etc., for example, the following methods may be used. After completion of a culture, cells are separated from a culture broth by using a centrifuge and the like, then the cells are washed with distilled water, methanol and the like, and dried. A polyester is extracted using organic solvents such as chloroform. Cell components are removed from the polyester-containing organic solvent by filtration, etc., and poor solvent such as methanol or hexane is added to the filtrate to precipitate the polyester. The supernatant is removed by filtration or centrifugation, and dried to collect a polyester.

Please amend paragraph [0059] as follows:

[0059] The polyester production culture was carried out as the following. 10 L jar fermentor (MDL-1000 type, product of B. E. Marubishi Co., LTD.) containing 6 L of the production medium was inoculated with 1.0 v/v % of the preculture seed. The running condition was set to be a culturing temperature of 28° C., a stirring rate of 400 rpm, an aeration rate of 3.6 L/min and pH was ~~controlled~~ controlled of between 6.7 and 6.8% ammonium hydroxide solution was used for the pH control. 14% ammonium hydroxide solution was used for the pH control. The culture was carried out for 60 hours, samplings were conducted at every 4 hours after 16 hours of the culture, cells were collected by a centrifugation, washed with methanol, lyophilized and the weight of the dried cells was measured.